



CFP2000 Result

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IBM Corporation
IBM eServer e326 (AMD Opteron (TM) 248)

SPECfp2000 = 1687
SPECfp_base2000 = 1553

SPEC license #: 11 | Tested by: IBM, Inc. | Test date: Jun-2005 | Hardware Avail: Sep-2004 | Software Avail: Apr-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000 2000 3000 4000			
168.wupwise	1600	75.5	2119	68.6	2331	[Bar chart showing ratio bars for 168.wupwise]			
171.swim	3100	133	2330	128	2414	[Bar chart showing ratio bars for 171.swim]			
172.mgrid	1800	124	1447	112	1614	[Bar chart showing ratio bars for 172.mgrid]			
173.applu	2100	129	1622	112	1870	[Bar chart showing ratio bars for 173.applu]			
177.mesa	1400	85.2	1643	78.7	1779	[Bar chart showing ratio bars for 177.mesa]			
178.galgel	2900	114	2534	101	2868	[Bar chart showing ratio bars for 178.galgel]			
179.art	2600	121	2142	91.4	2845	[Bar chart showing ratio bars for 179.art]			
183.quake	1300	103	1265	98.4	1321	[Bar chart showing ratio bars for 183.quake]			
187.facerec	1900	98.8	1923	90.7	2094	[Bar chart showing ratio bars for 187.facerec]			
188.amp	2200	206	1069	195	1127	[Bar chart showing ratio bars for 188.amp]			
189.lucas	2000	135	1483	135	1483	[Bar chart showing ratio bars for 189.lucas]			
191.fma3d	2100	162	1298	158	1331	[Bar chart showing ratio bars for 191.fma3d]			
200.sixtrack	1100	156	707	148	741	[Bar chart showing ratio bars for 200.sixtrack]			
301.apsi	2600	201	1296	193	1349	[Bar chart showing ratio bars for 301.apsi]			

Hardware

CPU: AMD Opteron 248
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 1,2
Parallel: No
Primary Cache: 64KBI + 64KBD on chip
Secondary Cache: 1024KB (I+D) on chip
L3 Cache: N/A
Other Cache: N/A
Memory: 8 x 1GB, DDR400
Disk Subsystem: SCSI, 36GB 10K RPM
Other Hardware: None

Software

Operating System: SuSE Linux 9.0 SP1 SLES 64 bit Kernel 2.6.5-7.151-smp (SP1)
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.1
File System: Linux/reiserfs
System State: Multi-user, run level 3

Notes/Tuning Information

Tested by IBM, Inc.

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML means -L/opt/acml2.5.1/pathscale64/lib -lacml,
which causes linking with AMD Core Math Library V2.5.1
```

Baseline optimization

```
C programs: -Ofast -WOPT:mem_opnds=on +FDO
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +FDO
Portability Flags:
178.galgel: -fixedform
```

Peak Tuning:

```
168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3
-OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3
-IPA:linear=on:plimit=50000:callee_limit=5000
-INLINE:aggressive=on
```



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Notes/Tuning Information (Continued)

```

171.swim:      -Ofast -LNO:fusion=2 -m3dnow
172.mgrid:    -O3 -LNO:fusion=2:blocking=off
              -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
              -CG:gcm=off:cflow=off -m3dnow
173.applu:    -Ofast -CG:local_fwd_sched=on
              -LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
              -OPT:ro=3 -TENV:X=3
177.mesa:     -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel:   -Ofast -OPT:fast_complex=on +ACML
179.art:      -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32
183.quake:    -Ofast -CG:load_exe=2 -OPT:treeheight=on -WOPT:mem_opnds=on -m32
187.facerec:  -Ofast -OPT:IEEE_NaN_Inf=off:ro=3 -LNO:fusion=2
              -IPA:plimit=1500 +FDO
188.ammp:     -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
              -fno-math-errno -TENV:X=4 +FDO
189.lucas:    basepeak = true
191.fma3d:    -O2 -ipa -CG:load_exe=1 -OPT:Ofast:IEEE_arith=3:ro=3
              -WOPT:mem_opnds=on:retype_expr=on -IPA:pu_reorder=1 +FDO
200.sixtrack:= -O3 -OPT:Ofast:Olimit=6000 -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:     -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0

```